

CONSTRUCTION SPECIFICATION

July 28, 2010

Project Number: 0907

Bid Number: 10-28DS

Bid Opening Date: August 24, 2010 @ 2:00 p.m. CST

City Hall Elevator Modernization

City Hall

411 West First Street



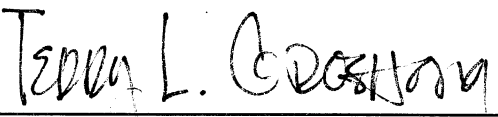
ARCHITECT: **CITY OF DULUTH**
Department of Public Administration
Office of City Architect
1532 West Michigan Street
Duluth, Minnesota 55806
(218)730-5730

Project Name: CITY HALL ELEVATOR MODERNIZATION

PROJECT NUMBER: 0907

Date: July 28, 2010

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

Name		Registration Number
Terry L. Groshong		15872

ARCHITECT: **CITY OF DULUTH**
Department of Public Administration
Office of City Architect
1532 West Michigan Street
Duluth, Minnesota 55806
(218)730-5730

ELEVATOR DECOMMISSIONING SPECIFICATIONS

CITY OF DULUTH – CITY HALL Elevators #1 and #2

PART 1: GENERAL

1.01 APPLICABLE DOCUMENTS

- A. Bidding, Requirements, Conditions of the Contract and pertinent portions of Sections in Division One of these Specifications apply to the Work of this Section.

1.02 SUMMARY

- A. Section includes: The abandonment of the existing elevators (#1 and #2) on the site, and the application for the obtaining of all necessary permits including the payment of permit fees.
- B. Related work specified in other sections:
 - 1. Building Demolition – Section 02060.

1.03 QUALITY ASSURANCE

- A. Licensing and Permits
 - 1. Obtain elevator abandonment permits as required from the City, County and/or the State of Minnesota.
 - 2. Elevator contractor may be required to provide a separate surety bond and a certificate of insurance to the City of Duluth prior to obtaining a permit. A performance bond may also be required as a condition of the permit.
 - 3. All fees for licensing and permits shall be paid by the Contractor.

1.04 SUBMITTALS

- A. Make submittals, as required by the City of Duluth.

PART 2

2.01 SCOPE OF WORK

The two traction passenger elevators (#1 and #2) shall be decommissioned by the following means:

1. Suspension ropes shall be removed
2. Cars and counterweights will permanently rest at the bottom of their respective hoistways.
3. Hoistway doors shall be permanently bolted or sealed in the closed position on the hoistway side.

Remove the following:

1. All electrical wiring and conduit
2. Hall fixtures

Competent contractor shall carefully remove all equipment hereinafter specified in a professional manner. The disposal of the removed equipment shall be the Contractor's responsibility except as otherwise directed by the Owner.

PART 3: EXECUTION

3.01 EXAMINATION OF PROJECT CONDITIONS

- A. Prior to removal and demolition, examine the project conditions required to execute the work of this section.

- END OF DOCUMENT -

APRIL 2010

City of Duluth CITY HALL

Elevator Modernization Specifications, Bid Documentation and Maintenance Agreement

ELEVATORS #1 & #2

ELEVATOR ADVISORY GROUP, INC.
375 Kellogg Boulevard East * Saint Paul, Minnesota 55101 * 651-293-0595

BID INSTRUCTIONS

INVITATION TO BIDDERS

A proposal for work described and conditions set forth in these documents shall be addressed to:

Ted Smith, President
ELEVATOR ADVISORY GROUP, INC.
375 Kellogg Boulevard East
St. Paul, Minnesota 55101

-AND-

Terry L. Groshong, AIA
City Architect – City of Duluth
15332 West Michigan Street
Maintenance Shop
Duluth, MN 55806

Bids shall be received until AUGUST 24 · 2:00 PM, 2010.

Proposal must be made on the form provided. The blank places in the form must be filled in as noted, and no change shall be made in the phraseology of the proposal or in the items mentioned herein.

Proposal must be signed by the Bidder in accordance with the directions on the form and must be enclosed in a sealed envelope, plainly identified with the name and address of the Bidder.

INSTRUCTIONS TO BIDDERS

A. PROPOSAL INFORMATION

1. Firm lump sum for all work specified. Price to be firm for 120 days from bid date.
2. Provide complete schedule for project from award date to completion date by working single shifts and leaving at least -- passenger cars running continuously. Consideration of schedule will be a factor in contract award.

B. QUALIFICATIONS OF BIDDER

1. Any Bidder, after opening of bids and before the award of contract, upon request by the Owner, shall furnish satisfactory evidence that he/she has had previous experience and possesses an adequate plant, financial resources and organization to perform the type and quality of work specified and to complete project within the time specified. Owner shall have the right to make an award to the Bidder with the ability and equipment to best perform the requirements of these specifications.

C. EXAMINATION OF EXISTING BUILDING AND CONTRACT DOCUMENTS

1. Bidder shall carefully examine existing building and make all necessary investigations required to inform himself/herself thoroughly and fully as to facilities for delivering materials and equipment.
2. Each Bidder shall examine specifications and all other data or instructions pertaining to the work. No pleas of ignorance of conditions that exist, or of difficulties or conditions that may be encountered or of any other matter concerning the work to be performed will be accepted as an excuse for any failure or omission on the part of the Bidder to fulfill every detail of all the requirements of the documents governing the work. Bidder, if awarded the contract, shall not be allowed any extra compensation by reason of any matter or thing concerning which such Bidder might have fully informed himself/herself prior to bidding, including increased costs which may occur during the contract period.

3. When tendering proposal, Bidder shall give written notice to Owner of any materials or apparatus that is in violation of laws or ordinances, rules or regulations of all authorities having jurisdiction. If Bidder fails to give such written notice, it shall be assumed that he/she has included the cost to remedy all such items in his proposal and will be held responsible for satisfactory functioning and approval of entire installation without extra compensation.

D. EXPLANATIONS AND ADDENDA

1. Any Bidder in doubt as to the true meaning of any part of the specifications or other proposed contract documents shall submit to the Owner a written request for an interpretation thereof. Any interpretation of the proposal documents shall be made only by an addendum duly issued. A copy of such addendum shall be mailed or delivered to each Bidder.
2. Any addendum issued up to and including the bid date shall be included in the bid price and any contract resulting therefrom.
3. Any verbal information obtained from or statements made by Owner at the time of examination of the documents or site shall not be construed as in any way amending contract documents. Only such corrections or addenda as are issued in writing to all Bidders shall become part of the contract.

E. REJECTION OF BIDS

1. Owner reserves and has the right to reject any of all bids, waiving of informalities and awarding of any bid.

F. SUBSTITUTION OF MATERIAL OR EQUIPMENT

1. All Bidders must submit their proposals in strict accordance with materials mentioned in specifications as base bid.
2. Bidders may, at their option, submit substitutions based on materials or equipment other than that specified by name in the specifications if prior approval is given by Architect or Consultant. Request for approval of substitutions must be in writing and received not later than seven (7) calendar days before the subcontract bid opening date.

3. All substitutions and alternates must be submitted with base bid. In no event can substitutions or alternates be submitted unless a bid is also submitted in strict conformance with specifications of the base bid.
4. Bidder must state alternate's name, manufacture, type or brand of material or equipment and deduction from base bid with his proposal.
5. Substitute materials or equipment must meet all requirements as to type, quality, and function as that originally specified.
6. Acceptance of a substitute article, material or piece of equipment, shall be subject to approval of the Owner and his/her decision shall be final.
7. Bidder shall submit upon request, complete engineering data to indicate comparable quality, design, and efficiency of alternate.

G. FORM OF PROPOSAL

All bids shall be submitted in the form of proposal attached hereto.

H. ASSIGNMENTS

The Bidder selected to do the work set forth herein shall not assign all or any part of said work without prior approvals of the Owner.

BID FORM

TO:

ATTENTION:

LADIES & GENTLEMEN:

In submitting this bid, the Bidder declares that he/she is the only person interested in the said bid; that it is made without any connection with any person making another bid for the same contract; that the bid is in all respects fair and without collusion, fraud or mental reservation.

The Bidder also hereby declares that he/she has carefully examined the specifications and form of proposal, and has personally inspected the actual location of the work together with the local sources of supply, has satisfied himself/herself as to all the quantities and conditions and understands that in signing this proposal he/she waives all right to plead any misunderstanding regarding the same.

The Bidder further understands and agrees to furnish and provide all the necessary material, machinery, implements, tools, labor, services and conditions to complete the work in accordance with the specifications which are a part of this proposal.

The undersigned, _____
(Name of Bidder)

of _____
(Address)

having carefully examined the invitation to bid, instructions to Bidders and technical specifications, all of which are attached hereto, and the addenda listed herein, as well as the premises and conditions affecting the work, proposes to furnish all material, labor and all else necessary for the entire work and submit the following:

FORM OF PROPOSAL

A. CONTRACT PRICES

Base Bid \$ _____

Breakdown of Base Bid (Included):

Performance Bond	\$ _____
Payment Bond	\$ _____
Elevator Work	\$ _____
General Construction Work	\$ _____

TIME SCHEDULE

Award Date	_____
Drawings for Approval	_____
Start Modernization	_____
50% Complete	_____
Code Test Date	_____
Acceptance Review	_____
Final Acceptance	_____
Number of weeks - out of service (each)	_____

B. MAINTENANCE

A separate Owner's maintenance contract shall be provided by the building manager. Contract shall commence and include services as specified in outline of work. The agreement will not be activated until accepted by the Owner at the end of the warranty period.

Interim Maintenance: Interim maintenance shall commence on the date of notice to proceed and end at the date of job completion. Interim maintenance shall comply with the conditions of the Owner's Full Maintenance Contract, available from the building manager. Interim maintenance cost shall be part of the Base Bid. If the Owner elected to purchase interim maintenance separately, the price per unit, per month shall be provided.

Interim Maintenance: \$_____ per unit, per month.

Warranty Maintenance: Warranty maintenance shall commence when the elevators have been accepted as complete by the Owner. The warranty maintenance shall be for one (1) year period. The warranty maintenance shall comply with the conditions of the Owner's Full Maintenance Contract. Warranty maintenance cost shall be part of the Base Bid. If the Owner elected to purchase interim maintenance separately, the price per unit, per month shall be provided.

Warranty Maintenance: \$_____ per unit, per month.

Full Maintenance: The Owner's Full Maintenance contract is available from the building manager. At the Owner's option, the Owner's Full Maintenance contract may be purchased at the end of the Warranty maintenance period. The price quoted shall be effective at the end of the Warranty maintenance period.

Full Maintenance: \$_____ per unit, per month.

FORM OF PROPOSAL

B. ADDENDA

The following addenda to the specifications have been received by the undersigned:

ADDENDUM NO.	DATE
_____	_____
_____	_____
_____	_____

THIS PROPOSAL IS IRREVOCABLE FOR 120 DAYS.

This proposal cannot be altered or reworded for 120 days from the date of opening bids.

Very truly yours,

NAME OF ELEVATOR CONTRACTOR

BY: _____

TITLE: _____

ADDRESS: _____

TELEPHONE NO.: _____

DATE: _____

ACCEPTED:

(NAME OF OWNER/AGENT)

BY: _____

TITLE: _____

DATE: _____

SECTION 14000
ELEVATOR MODERNIZATION

PART 1 - GENERAL CONDITIONS OF CONTRACT

1.01 ASSOCIATED SECTIONS AND DOCUMENTS

- A. For work under this contract, the Elevator Contractor is referred to the instructions to Bidders, form of proposal, and all amendments and addenda thereto, all of which are hereby made part of this contract.
- B. The Contractor shall be subject to the "General Conditions of the Contract" of the American Institute (AIA) Document A201, 1987 Edition, which shall form a part of this specification except as otherwise herein provided.
- C. Where clauses are repeated herein it shall be understood as calling attention to them or as a further qualification and shall not be construed as omitting any other part of the clause.
- D. In the event of a conflict between the documents, this contract shall govern.
- E. Reference Appendix A: "General Condition of the Contractor for Construction of a Small Project."

1.02 DESCRIPTION OF WORK

- A. The extent of work to be performed shall include all labor, equipment, material and services necessary to fully comply with these specifications. All work shall pertain to these elevators unless otherwise noted.
- B. Definitions:
 - 1. "Provide": To supply, install, connect and make ready for safe and normal operation the complete elevator system as specified herein.
 - 2. "Install": To erect, mount, and connect complete with related accessories.
 - 3. "Supply": To purchase, procure, acquire and deliver complete with related accessories.
 - 4. "Work": Labor, materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.

5. "Wiring": Conduit, fittings, wire, traveling cables, junction and outlet boxes, switches, cutouts, receptacles, related items and accessories.
6. "Similar" or "Equal": Approved material, weight, size, design, and characteristics to the specified product.
7. "Approved"; "Satisfactory", "Accepted", or "Directed": As approved, satisfactory, accepted or directed by or to the Owner.
8. "Owner": Shall be defined as person or company holding title to property in which this specified work is to be performed or his appointed representative(s).
9. "Contractor": Shall be defined as the elevator company performing the work described in these specifications.

1.03 INTENT

- A. Intent of these specifications is to cover the specified work complete and operable in every respect. It is not intended to give every detail in the specifications. Owner will not be responsible for absence of wiring diagrams of existing equipment or any detail Contractor may require. Furnish all material and equipment usually furnished with such systems and/or needed to make a complete and safe operating installation, whether specifically mentioned or not, omitting only such parts and assemblies as are specifically excepted.
- B. All material and equipment furnished shall be new and in perfect condition.
- C. Owner's interpretation of specifications shall be final and binding upon Bidder.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Either the elevator manufacturer, a licensee of the manufacturer, or elevator contractor who has not less than five years successful experience with providing and installing similar elevator work.
- B. PRODUCTS
Acceptable system manufacturers are listed as follows: No other substitution will be accepted unless approval is given before date of bid.
- | | | |
|----|----------------|--|
| a. | Controllers | MCE, Elevator Controls |
| b. | Fixtures | Adams, Epco, The Fixture Company,
Innovation, GAL |
| c. | Electronics | CE Electronics, PSI |
| d. | Braille | SCS Braille |
| e. | Phone | Rath Microtech Phone |
| f. | Roller Guides | Elsco |
| g. | Door Operators | GAL |
- C. Acceptable elevator contractors are as follows:
1. Otis
 2. Schindler
 3. ThyssenKrupp
 4. Minnesota
- D. Regulatory Requirements: All work shall comply with current (at time of bid) governing local codes; conform to all laws, ordinances and regulations affecting the erection, sequence of erection and completion of the whole or part of the work; and conform to the requirements of authorities having lawful or customary jurisdiction. These requirements shall take preference over the contract documents except where the contract documents require better materials or workmanship, also acceptable to the authorities. The Contractor shall be held responsible for any violations of codes caused by himself or his employees. Any additional expense caused thereby shall be borne by the Contractor. Owner warrants that as of bid date no violations have been placed upon the existing equipment by any authority having jurisdiction.
- E. Standards: Except as modified by local governing codes and by this section, new work shall comply with provisions of the following, and in the event of conflict between these standards, the most stringent standard shall be used.

1. ANSI:

American National Standard Safety Code, A17.1-2004 and all supplements.

American National Standards Practice for the Inspection of Elevators, Escalators and Moving Walks Inspectors Manual A17.2, Latest Edition.

American National Standard Safety Code for Existing Elevators and Escalators - A17.3, Latest Edition.

American National Standard - Accessible and Usable Buildings and Facilities - A117.1-1980 or later editions.
2. ASME: American Society of Mechanical Engineers.
3. ASTM: American Society for Testing and Material.
4. AWS: American Welding Society.
5. CS: Commercial Standard U.S. Department of Commerce.
6. CSA: Canadian Standards Association.
7. IEEE: Institute of Electronic and Electrical Engineers.
8. NEC: National Electrical Code.
9. NEMA: National Electrical Manufacturers Association.
10. NFPA: National Fire Protection Association.
11. NBS: National Bureau of Standards.
12. OSHA: Occupational Safety and Health Administration.
13. UL: Underwriters Laboratories.
14. ADA: Americans with Disabilities Act
15. Minnesota State Building Code

1.05 LAWS AND PERMITS

- A. Contractor shall comply with all federal, state and municipal laws and ordinances, prepare all documents, give all notices, obtain all permits necessary for the work, pay all costs and fees for permits and inspections and obtain all certificates of inspection and approval for the work and deliver same to the Owner before requesting final or beneficial use acceptance.

1.06 CONFLICTS

- A. Should it appear that there is real or apparent discrepancy between different sections of specifications concerning nature, quality or extent of work to be furnished, it shall be assumed that Contractor has based his/her bid on completing the work in a more stringent manner. Final decision will rest with the Owner.

1.07 SUBMITTALS

- A. Contractor shall submit three sets of shop drawings for equipment layout, fixtures drawings, catalogs and catalog data of all new equipment to be provided.
- B. As soon as approval has been given, Contractor shall submit four prints of approved shop drawings and schedules. Also supply to field as many prints of approved shop drawings and schedule as required.
- C. All submittals shall be on dates sufficiently in advance of job progress requirements to afford ample time for checking, and no claim for extension of contract time will be granted Contractor by reason of his failure to comply with this request. All submittals shall be complete and shall contain all required and detailed information.
- D. Contractor shall check all submittals for conformity with contract specifications and correct any errors, omissions or deviations before transmittal. Specifications, catalogs, etc., submitted for approval shall be properly labeled indicating specific service for which material or equipment is to be used, Manufacturer's name and name of job. Catalogs, pamphlets or other documents submitted to describe items on which approval is being required, shall be specific and identification of item submitted shall be clearly made in ink. Data of general nature will not be accepted.

- E. Contractor shall be responsible for correct quantities, dimensions, design of adequate connections, details for satisfactory construction of all work and furnishing of materials for work required by the intent of the contract documents, even if not indicated on submittals that have been approved by Owner or authorized representative.
- F. Owner or authorized representative shall check drawings for design only and approval of drawings, schedules, and catalogs shall not be construed as a complete check and shall not relieve Contractor of his/her responsibilities as stated above.
- G. If submittals differ from requirements of contract documents, Contractor shall make specific mention of such difference in his/her letter of transmittal with a request for substitution, together with his/her reasons for same in order that, if acceptable, suitable action may be taken for proper adjustment. It is understood and agreed that specific written approval of substitute materials and/or methods is required before Contractor can proceed with a substitution.
- H. No material shall be delivered until Contractor has obtained written approval of shop drawings and other data enumerated above. Should materials or equipment be delivered before required approval, Contractor shall be liable for its removal and replacement at no charge, if material or equipment does not meet intent of documents.
- I. By approving and submitting shop drawings and samples, the Contractor thereby represents that he/she has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated the shop drawings and samples with the requirements of the work of the contract documents.
- J. Prior to the final acceptance of the work of this section, submit two (2) copies of the following bound manuals to the Owner or authorized representative for review:
 - 1. Operating Instructions: Printed or typewritten literature describing the function and operation of all controls.
 - 2. Maintenance Instructions: Printed or typewritten schedules of all required maintenance procedures.

3. Wiring Diagrams: Full size, ladder type, complete, "as built" wiring and single line diagrams showing the electrical connections, functions and sequence of operation of apparatus connected with the elevators, both in the machine room and in the hoistway, shall be furnished in duplicate for each elevator at the time of final inspection and acceptance. Coded diagrams are not acceptable.
- K. Deliver to the Owner six tagged spares of each different key used to lock control cabinets and other devices using keys on the elevator, such as access switches and car operating panels.

1.08 WARRANTY

- A. The Contractor warrants all workmanship and materials supplied by him/her for one (1) year. If during the correction period any defects or faulty materials are found, the Contractor shall furnish, at no additional cost to the Owner, all parts, materials, equipment, and labor necessary for the performance of service required under this contract; with the exception that the restoration to satisfactory operating condition of any equipment or any part or parts thereof damaged by negligence, abuse, or misuse thereof by persons other than the Contractor, his/her agents, representative, or employees, shall be excluded from coverage under this warranty.

1.09 MAINTENANCE

- A. Twelve Month Warranty Maintenance: Service shall be provided for the period indicated in the foregoing equipment outline on each elevator completed, after it has been turned over for the Owner's use. Maintenance shall meet the conditions of the **Owner's full maintenance contract**. Warranty maintenance to include 24 hour callback service. All work shall be performed during regular working hours of regular working days.
 1. Trained employees shall make periodic examinations of the elevator equipment and shall perform work including necessary adjustments, greasing, oiling and the replacement of parts necessary to keep the elevators in operation, except those parts which require replacement because of accidents, misuse or negligence by parties other than the elevator contractor.
 2. Overtime call backs shall be provided when the loss of use of the elevator(s) causes a loss of adequate service.

- B. Preventive Maintenance Program: Quote price for elevator maintenance to meet the conditions of the **Owner's maintenance contract**, commencing on completion of the twelve (12) month warranty maintenance. Submit quote based upon terms and conditions of the **Owner's Elevator Maintenance Agreement**. The Owner has the option to accept the maintenance agreement at any time prior to termination of the 12 month warranty maintenance period.

1.10 TESTS

- A. Conduct tests and adjustment of equipment as specified or necessary to verify performance requirements as required by the ANSI/ASME A17.1 Safety Code for Elevators and Escalators.
- B. Upon completion and full operation of all equipment, completely test same, both for the governing authorities and for compliance with the requirements of the contract documents. All necessary equipment for testing and cost involved shall be included as part of this contract. All tests shall be performed in accordance with the requirements of ANSI A17.2 and Applicable Codes. These tests shall include a five year safety test.
- C. If tests show that the new equipment is in any way defective, of poor workmanship, at variance with the requirements of the contract documents, or dangerous or objectionable in operation, the Contractor shall make all necessary changes and remedy all defects at his/her expense, to the satisfaction of the Owner and also pay for the expenses of all subsequent tests until all equipment is acceptable.
- D. Upon completion of satisfactory tests, secure and furnish to the Owner certificates from all departments having jurisdiction that the elevators and related equipment have been inspected and approved.

1.11 CONDUCT AT SITE

- A. Personnel shall be instructed to refrain from un-workmanlike conduct while on the job.
- B. The employees furnished by the Contractor must be acceptable to the management staff of the Owner.

1.12 PROTECTION OF PERSONS AND PROPERTY

- A. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.
- B. Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:
 - 1. All employees on the project and all other persons affected thereby.
 - 2. All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site or under the care, custody or control of subcontractors.
- C. Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction over the safety of persons or property or to protect them from damage, injury or loss.

He/she shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting of danger signs and other warnings against hazards, promulgating safety regulations and notifying Owners and users of adjacent utilities.
- D. Contractor shall designate a responsible member of his/her organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the Owner.
- E. Contractor shall not load or permit any part of the work to be loaded so as to endanger the safety of the building or occupants.
- F. In any emergency affecting the safety of persons or property, the Contractor shall act, at his/her discretion, to prevent threatened damages, injury or loss.
- G. Contractor shall protect floors, walls, and other surfaces from damage during the course of the work. All damaged surfaces shall be restored by the Contractor. Failure by the Contractor to do so may result in the Owner having all restorations made, and charging all costs to the Contractor.

- H. Contractor shall be held responsible for compliance with the safety requirements of all city, state and federal agencies having jurisdiction, including the Occupation Safety and Health Act of 1970. Department of Air Resources and Environmental Control Board Regulations shall also be complied with.
- I. Contractor shall not include any asbestos or PCB abatement work in his/her proposal. Should the Contractor encounter any such products or material during the course of this work, the work shall cease and the Owner notified of the findings for corrective action. On completion of corrective action by Owner or his/her subcontractor, the Owner shall notify the Elevator Contractor in writing. The Elevator Contractor shall then proceed to complete his work and any predetermined schedules shall be adjusted accordingly to time required for the Owner's corrective action.

1.13 DISPOSAL OF EQUIPMENT

- A. All superseded equipment hereinafter specified shall be carefully removed in a professional manner by competent people. The disposal of the removed equipment shall be the Contractor's responsibility except as otherwise directed by the Owner.

1.14 SUBCONTRACTS

- A. Contractor shall submit for approval a list of all subcontractors to be used in the performance of the work. Contractor shall not assign the contract, or sub-contract any work to be performed thereunder without the prior written consent of the Owner.

1.15 APPROVALS

- A. Materials, workmanship, design and arrangement of work shall be subject to approval of Owner or designated agent.

1.16 ROYALTIES AND PATENTS

- A. Contractor shall pay all royalties and license fees. He/she shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss thereof.

1.17 CONTRACTOR'S INSURANCE RESPONSIBILITIES

- A. Types and respective minimum limits of coverage shall be as follows:

Comprehensive General Liability	\$1,000,000
Bodily Injury	Each occurrence
Property Damage	\$1,000,000
	Each occurrence
Comprehensive Automobile Liability	\$300,000/500,000
Bodily Injury	Each occurrence
Contractor's & Manufacturer's Liability	\$1,000,000
	Each person
Protective Bodily Injury	\$500,000
	Each occurrence
Workman's Compensation	Statutory Limitations

- B. The insurance coverage required herein shall be executed with companies satisfactory to the Owner and written for not less than the above limits, or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations.
- C. The insurance coverage shall include Owner as additionally insured.
- D. In lieu of an additional insured endorsement, the Contractor may maintain an Owner's and Contractor's Protective Liability Insurance Policy naming the Owner as named insured.
- E. The Contractor will defend, indemnify and hold harmless the Owner, their directors, officers, partners, employees and agents from all claims, expenses, damages, fines and legal fees which arise out of or relate to breach or negligent performance of this Specification.

1.18 PERFORMANCE BOND, LABOR AND MATERIAL PAYMENT BOND

- A. At the Owner's option, the Contractor may be asked for a bond covering the faithful performance of the contract and the payment of all obligations arising thereunder, such bonds in the absence of notice hereafter provided shall be obtained by the Contractor and the premium for such bonds will be paid by the Owner.

- B. Upon notice to the Contractor, upon signing of the contract, or within 60 days thereafter, the Owner shall have the right to require the Contractor to obtain the aforementioned bonds at prevailing rates with surety acceptable to the Owner. The Contractor shall have 15 days from date of notice to obtain and furnish such bonds

1.19 CLEANING, ADJUSTMENT AND FINAL ACCEPTANCE

- A. Cleaning: The Contractor shall at all times keep the premises, driveways and streets, clean and free from excess accumulation of waste materials or rubbish caused by the Contractor's operations.

At the completion of each workday, all rubbish shall be removed from and around the premises and all tools, scaffolding and temporary work shall be left broom clean, unless otherwise specified.

Should the Contractor fail to attend to such cleaning with reasonable promptness, then the Owner may cause such cleaning to be done by others and charge the cost of cleaning to the Contractor.

- B. Adjustments and Removals: After completion of the work, and before the issuance of Certificate of Final Acceptance, work area shall be thoroughly cleaned, and elevators properly adjusted so that they are in proper operating conditions.
- C. Contractor shall remove from the site - All debris, abandoned elevator equipment and associated materials with this contract, and shall remove all stains and defacements caused by the Contractor's work. The entire work area shall be left in a clean condition satisfactory to the Owner.
- D. The Contractor shall paint all parts of the elevator equipment that should be painted, including rails, machines, controller, pit equipment, etc., with a good grade of enamel paint. All equipment shall appear to be freshly painted and conspicuously clean at all times.

1.20 PROPRIETARY INFORMATION

- A. Any proprietary material, information or data contained in the equipment, or any component or feature thereof, remains the property of the Owner. This includes, but is not limited to, tools, devices, manuals, software, source codes, access codes, object codes, passwords and remote monitoring feature that is deactivated if elevator contractor maintenance is discontinued.

1.21 PAYMENT

- A. All invoices shall be submitted on AIA Document G702 – APPLICATION AND CERTIFICATE FOR PAYMENT. All Pay Applications must be forwarded to Consultant for verification and/or approval prior to forwarding to Owner for payment.
- B. The Owner will require a 10% retainage.

1.22 CONFIDENTIALITY

The Contractor acknowledges that certain of the Owner's valuable, confidential, and proprietary information may come into the Contractor's possession. Accordingly, the Contractor agrees to hold all information it obtains from or about the Owner in strictest confidence, not to use such information other than for the performance of the services, and to cause any of its employees, subcontractors, or consultants to whom such information is transmitted to be bound to the same obligation of confidentiality to which the Contractor is bound. The Contractor shall not communicate the Owner's information in any form to any third party without the Owner's prior written consent. In the event of any violation of this provision, the Owner shall be entitled to preliminary and permanent injunctive relief from a court of competent jurisdiction immediately enjoining the other party from continuing its breach, as well as an equitable accounting of all profits or benefits arising out of such violation, which remedy shall be in addition to any other rights or remedies to which the Owner may be entitled.

PART 2 - EQUIPMENT

SCOPE OF WORK:

To modernize two OTIS traction passenger elevators in the City of Duluth – CITY HALL Building, utilizing the plan outlined in the Specifications below. To ensure that the modernization project proceeds smoothly, within budget and time constraints. To ensure modernized elevators meet all ADA requirements, local codes, and produces excellent ride quality for passengers for the next 25-30 years.

2.01 DATA OUTLINE – ELEVATORS #1 & #2

NO. OF ELEVATOR(S):	TWO (#1 & #2)
TYPE:	Otis / R&O Traction Passenger
CAPACITY:	3,000 lbs.
SPEED:	400 fpm
TRAVEL IN FEET:	57' 6' field verify
NUMBER OF STOPS:	FIVE (5)
FLOORS SERVED:	G, 1 st – 4 th
GUIDE RAILS - CAR:	Retain
COUNTERWEIGHT RAILS:	Retain
BUFFER - CAR:	Retain and Recondition to Like New (<i>with INSPECTOR APPROVAL</i>)
GOVERNORS - CAR:	New – Hollister Whitney
SLING:	Retain
SAFETY:	New – Flex Wedge Clamp
CAR PLATFORM:	Retain – ADD New Subfloor
TOE GUARD:	New, code-compliant
GUIDE SHOES - CAR:	New 6" Elsco with Adjustable Stops

LOAD WEIGH:	New
CWT FRAME:	Retain <i>(with INSPECTOR APPROVAL)</i>
CWT FILLERS:	Retain
GUIDE SHOES COUNTER-WEIGHT:	New ElSCO 3 ½" with Adjustable Stops and new wooden slide guides.
BUFFER COUNTERWEIGHT:	Retain Traveling Buffer <i>(with INSPECTOR APPROVAL)</i>
CABLES - HOIST:	New
CABLES - GOVERNOR:	New
COMPENSATION:	New – WhisperFlex (with guides in pit)
COMPENSATION CHAIN EQUIPMENT:	New – with guides in pit
MACHINE GEARLESS:	New, Gearless - VVVF
MACHINE MOTOR:	Replace with VVVF AC
SELECTOR:	New electronic
DOOR OPERATORS:	Replace with GAL MOVFR
DOOR PROTECTION:	New - Infrared Door Screen. Janus Panachrome with red and green condition lights.
CONTROL:	New Microprocessor VVVF – Non Proprietary
SIGNAL LOGIC:	New Microprocessor - Non Proprietary
CAR TOP INSPECTION STATION:	New with firefighter's warning
WIRING:	New
TRAVELING CABLES:	New with 4 Coaxial Cables

ROPE GRIPPER:	Provide new
ACCESS SWITCHES:	New Top and Bottom
INTERIOR CAR DIMENSIONS:	80"W x 60"D x 65"D to door X 7'H (field verify)
CAR ENCLOSURE:	Modify cab as per Owner's design, as detailed in section 2.53 CAB
CAR STATIONS:	New with Adams Classic or Innovation PB-8. Buttons to be raised, except phone button, to be FLUSH PB-7.
EMERGENCY LIGHT:	Provide new in car station.
CAB POSITION INDICATOR:	New, 2" digital with direction of travel arrows in car operating station.
CAR HANDRAIL:	New code-compliant handrails with the ends of the handrails turned inward towards the cab. 1.5" tubular stainless steel - <i>as detailed in section 2.53 CAB</i>
TELEPHONE:	New Rath Microtech auto dial - Integral to car station
ENTRANCE SIZE:	48" x 7' 2SSO (field verify)
ENTRANCES:	Retain and paint with color of Owner's choice.
HOISTWAY DOORS:	Replace with UL-Labeled doors similar finish to existing doors (MUST be approved by Owner / Architect). Include door escutcheon locks on all floors
CAR DOORS:	Provide new #4 stainless steel
CAR DOOR TRACKS:	New
CAR SILLS:	New – Nickel Silver

HALL PUSH BUTTON FIXTURES:	New with Adams Classic Buttons or Innovation PB-8. Face plate to be embossed with Appendix "O".
NO. OF HALL BUTTON RISERS:	One
FIRE COMMAND CENTER:	Provide required fixtures – LOBBY PANEL (located behind Police Station) FF Service shall be integrated to the Fire Command Center
LOBBY PUSH BUTTON FIXTURE:	New
INTERCOM:	None
CAB RIDING LANTERNS:	Provide new with white LED lighting. Provide proper tones for direction of travel.
EMERGENCY POWER:	Provide provision, <i>if required</i>
INTERLOCKS:	New - GAL
DOOR HANGER ROLLERS:	New
DOOR CLOSERS:	New
DOOR TRACKS:	New
POWER SUPPLY:	208v; 3ph; 60 Hz (field verify)
HOISTWAY NUMBERS:	New
FIREFIGHTER'S SERVICE:	Provide - 2005
MACHINE ROOM MONITOR:	Provide - EMS
FIRST FLOOR LOBBY PANEL:	Provide New
MAINTENANCE SERVICE INCLUDED:	Yes
UNITINTENDED MOTION BRAKE:	New

2.02 RAILS – CAR

The rails shall be retained for the modernization. The rails shall be cleaned and filed to remove all build up on rails. Any depression or marks caused by safety application shall be filed smooth.

All missing splice plate bolts shall be replaced with proper sized bolts compatible to original bolts. Each splice plate shall be properly tightened.

The rails shall be checked and aligned to be parallel and equidistant to each other. The compression shall be checked and corrected, if necessary. Rails shall pass a ride quality evaluation.

2.03 RAIL BACKING

The existing rail backing shall be retained. Provide additional rail backing, if required. All fastenings shall be checked for missing pieces and replaced, if necessary.

2.04 RAIL BRACKETS

The existing rail brackets shall be retained in place. Provide additional rail brackets, if required. Check brackets for secure fastening and replace any missing hardware.

2.05 BUFFERS – CAR AND COUNTERWEIGHT

The existing car and counterweight buffers shall be **retained** and **reconditioned** to like-new, **with INSPECTOR APPROVAL**.

All buffer supports shall be checked for proper securing of the buffer. The applicable buffer tests shall be performed in accordance with code requirements. Provide new data plates.

2.06 GOVERNOR

The existing governor shall be removed and **replaced with new** Hollister Whitney.

A speed governor shall be provided to operate a governor tripping mechanism should the car speed or rate of change of speed exceed the governor settings. The action of the governor on the governor rope shall cause safety application. The governor shall be connected to the car safety by a new governor rope that passes over the governor sheave. Governor tripping speed switches shall be provided that will cause appropriate action of motion control system.

The governor rope shall be iron or steel. Sheave diameter shall comply with ASME standards. The governor shall be sealed by required code and properly lubricated.

2.07 GOVERNOR PIT SHEAVES

The existing governor pit sheave shall be reused, cleaned, and lubricated.

2.08 CAR SLING

The existing car frame shall be retained. All missing mounting hardware shall be replaced. Any bent or deformed members shall be replaced with proper size members. Provide new cross head data plate.

2.09 SAFETY

The existing safety shall be **replaced** with new Flex-Wedge clamp style safeties.

Any replacement parts shall be of the same design and materials as original safety to provide for compatibility and original manufacturer's design requirements. All necessary adjustments shall be made to cause safety to perform in accordance with code requirements.

2.10 PLATFORM

The existing platform shall be **retained, cleaned, painted, and repaired as required**. Composition shall be engineered to comply with capacity and strength requirements.

Provide **new nickel silver car sill**.

Provide **new code compliant toe guard**.

Provide **new subfloor**.

2.11 GUIDE SHOES

New roller guide shoes shall be furnished securely bolted to the car and counterweight frame at top and bottom. Each roller guide shall consist of, as a minimum, a set of three sound-reducing wheels in precision type ball bearings and held in contact with the rail surfaces by means of adjustable devices. Roller guides shall run on dry unlubricated guide rails.

Top of car and counterweight roller guides shall be fitted with dust guards.

The guides for the car shall be Elasco Model "B" with 6" diameter rollers and adjustable stops. The counterweight guides shall be Elasco Model "D", 3 1/2" diameter roller guides with adjustable stops.

Roller guides shall be properly aligned in respect to rail surface.

2.12 LOAD WEIGH

The existing load switch shall be **replaced** with new load weigh system.

A load weigh system shall be incorporated in the platform and/or frame design that will provide information to the control for requirements of motion control, load dispatch and load bypass. Adequate individual outputs to provide these various functions shall be independently adjustable.

2.13 PIT LADDER & WORK PLATFORM

The existing pit ladders shall be removed if not code compliant, and replaced with new code-compliant pit ladders. Provide work platforms and pits, if required by code.

2.14 COUNTERWEIGHT

The existing counterweight shall be retained, **with Inspector Approval**. Weights shall be added or removed as necessary to compensate for the car weight plus a minimum of 40% of rated load.

In the event the new weight of car, counterweight, and capacity exceeds 5% more than the existing weight, Owner will provide architectural and engineering services to certify the adequacy of existing supporting structure(s).

Retain Traveling Buffer, **with Inspector Approval**.

2.15 CABLE FASTENING

Replace all cable fastenings with new wedge style devices when hoistropes are replaced. Springs shall be of proper tension to handle the specified loads. Two clips per rope per end shall be properly spaced to comply with design criteria and code. Cable tags shall be applied to end of cables to provide data as specified by code. Shackles shall not have Babbit. Shackle height shall be staggered.

2.16 GOVERNOR ROPE

The existing governor rope shall be **replaced**. New iron or steel governor rope shall be provided. The rope shall be of type and design to be compatible with the governor design.

2.17 HOIST ROPES

The existing hoist ropes shall be **replaced**.

Traction steel hoist ropes of the size and number to insure proper wearing qualities shall be provided. As a minimum, the number of ropes shall comply with the factor of safety requirements of the American Standard Safety Code for elevators. They shall be pre-stretched. Ropes shall not stretch at the floor with varied capacity.

2.18 CHAIN COMPENSATION

N/A

2.19 MACHINE BEAMS

The existing machine beams shall be reused. Additional spacing beams shall be installed, if needed, and will meet engineered requirements and code.

2.20 MACHINE – GEARLESS

The existing gearless machine shall be replaced with new, VVVF Gearless Machine.

The machine shall be a gearless traction type with the motor, brake pulley and drive sheave mounted in proper alignment on a common bedplate. Machine the drive sheave with grooves providing proper traction with a minimum of cable and sheave wear. The sheave shall have the Brinell hardness mark properly located.

Provide the machine with an electro-mechanical brake. The brake shall be spring applied and electrically released.

Swivel type brake shoes shall be applied to the braking surface simultaneously and with equal pressure by means of helical compression springs. The brake electromagnet shall be designed for quick release to provide smooth and gradual application of the brake shoes.

Provide cable guards from the floor to the cable pinch point, on both sides of the machine sheave, to prevent items from being caught between the cables and sheave per ASME A17.1.

Provide new ROPE GRIPPER, per code.

2.21 SHEAVES

The existing sheaves shall be replaced.

2.22 GENERATOR

The existing motor generator set shall be replaced with new AC VVVF motor drive.

2.23 TRANSFORMERS

Isolation transformers shall be provided. They shall be fused, if required by Code Authorities.

2.24 DOOR OPERATOR

A passenger type master door operator shall be furnished to open and close the car and hoistway doors simultaneously. Door movement shall be electrically controlled throughout the entire travel of doors. The new operator shall be a GAL MOVFR, Otis AT 400, or the Otis I-Motion 2.

DOOR CONTROL

The operator shall be controlled with a solid state controller located on top of elevator enclosure. The operation of the doors shall be controlled by open and close commands from the Microprocessor signal logic. The operation shall be provided with a motor of adequate horsepower for opening size. Operation shall be fully controlled for smooth consistent operation. Opening speed shall be a minimum of 2 F.P.S. and closing speed shall be set to meet the force and torque requirements of applicable codes. The door operator shall reduce the kinetic energy of the door system to meet the ADA requirements of 2.5 ft. lbs. The doors shall operate smoothly and quietly in both directions.

DOOR COUPLER / CLUTCH

A mechanical coupler to connect the car and hoistway door shall be provided. The operation of the coupler shall provide driving motion of the hoistway doors for full open and full close direction. The drive rollers shall remain engaged to prevent separation of the hoistway doors from the car doors. The doors shall be provided with a restrictor device to prevent the opening of the doors when the car is out of the leveling zone.

CAR DOOR CONTACTS

Each elevator car door shall be equipped with an approved electric contact which will prevent the operation of the elevator driving machine by the normal operating device unless the car door is in the closed position (as defined by the ANSI Code) except when the car is in the landing zone and is either stopped or being stopped. Car door contacts shall be so located that they are not readily accessible from the inside of the car.

CAR DOOR HANGERS AND TRACKS

Door hangers and tracks shall be provided for each car door. The hangers and rollers shall be designed for high speed power operation and have provisions for vertical and lateral adjustment. Hangers shall be designed for two point suspension of each door panels. Hanger sheaves shall have a resilient surface and pre-lubricated sealed bearings. Hangers shall be provided with upthrusts adjustments to prevent sheaves from being removed from track unless upthrusts are loosened. The track(s) shall be a shaped finished surface to fit the sheave profile and of adequate strength to properly support the doors and periphery equipment without deflection of track. Provide the hangers with safety retainer device.

HOISTWAY DOOR INTERLOCKS

An electro-mechanical interlock shall be provided for each hoistway entrance. The interlock system shall be a tested and approved system to comply with the applicable codes. The interlocks shall be wired with high temperature wire, as required by code. The interlocks shall prevent operation of the car away from the landing unless the doors are in closed and locked position as defined by applicable codes.

The interlocks shall also prevent the opening of a hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped at that level. Interlocks shall be so located that they are not accessible from the landing side when the hoistway doors are closed.

UNLOCKING DEVICES

Emergency devices and keys for opening the hoistway doors from the landing shall be provided in accordance with code requirements. A lunar key and fire box shall be provided and installed in the Main Egress Lobby.

DOOR PROTECTIVE DEVICES

The car doors shall be provided with a protective device that detects an object in the path of the closing doors at such a distance that reversal of the doors can be provided without physical contact of the detector.

The device shall include infrared light beams that provide protection across the entire opening. The arrangement of the infrared beams shall be to maintain the doors in a full open direction if the doors are open and the beams are obstructed. Should the doors not be obstructed and in the closing motion, the reversal shall be dependent on the detector assembly to allow continuous closing until minimum distance to object is reached. An automatic adjustable timed cutout shall be provided should the beams become obstructed for an extensive period of time.

Door nudging shall be initiated when the infrared light beams are constantly interrupted for a predetermined time.

A distinctive buzzer shall sound, if the infrared door control unit shall become inoperative and the doors shall commence closing action. The door protective device shall remain operative and the doors shall remain in the position where the infrared beams were interrupted, but not return to the open position. When the infrared beams are restored, power shall be restored to the doors and they will attempt to close. The gentle nudging action by the doors at the point where they are being held shall be used to reduce delays in door operation. The kinetic energy of the doors shall be reduced to 2.5 ft. lbs. or less when the nudging feature is activated.

2.25 CONTROL – VVVF

The control of the motor shall be a variable voltage variable frequency control. The control shall be designed for elevator motor control and capable of handling the varying loads of overhauling or driven motors.

Regeneration capabilities for overhauling load shall be accomplished by a network that allows the incoming supply lines to be used as a load source.

The control shall be a closed loop feedback system that controls the elevator throughout the performance cycle. The control shall be designed for high efficiency and high power factor for reduced energy consumption.

All phases of the performance cycle shall be accurately controlled and separately adjustable. Low line voltage protection shall be provided. Motor current protection shall be provided.

The system shall utilize technology that provides for minimum noise produced by the motor throughout the performance cycle. Audible or electromagnetic interference shall not be acceptable. AM Radio interference is not acceptable. The effects of electrical harmonics shall be reduced to zero.

2.26 SIGNAL LOGIC MICROPROCESSOR

The signal logic shall be a microprocessor based system. All individual car logic and group logic shall be done by utilizing solid state boards and Microprocessor. The system shall be of manufacturer's latest production design. Prototype systems are not acceptable. The system shall be non-proprietary and serviceable by any competent elevator service technician.

The system shall have the capability of remote monitoring. The system shall have capability to display on the monitors car movement, car position, car calls, landing calls, reserved calls, car load status, call mode status, car direction, door motion and door position. The system shall be "remote monitoring" ready through the installation of extra communication ports, in the group supervisory system.

The group dispatcher shall contain capability of fault diagnostic, traffic statistics, system parameters, test data and traffic mode to be displayed on machine room monitor. The system shall have the capability of printer connection for printouts. All diagnostic equipment shall be built into the control cabinets or provided separate as part of the base system. No required diagnostic equipment shall be removed from the equipment room.

Diagnostic lights shall be clearly visible on solid state boards. The system shall contain built-in diagnostic capability. No system utilizing removable diagnostic equipment shall be accepted without the diagnostic equipment being furnished to owner as part of the equipment.

All inputs to the Microprocessor assembly shall be through opto-isolation. Outputs shall be isolated and designed for handling required current and voltage loads. Power supplies shall be properly filtered and voltage levels designed to accommodate a 10% line voltage variation without losing regulation or over heating. All components shall be commercially available.

2.28 GROUP

A microprocessor based group dispatcher shall be furnished.

All dispatching features shall be selected automatically to meet the passenger traffic demand.

The system shall monitor:

- Position of all cars
- Direction of all cars
- Load status of all cars
- Door status of all cars
- Number of car calls and destinations
- Number of elevators available
- Operational status of each elevator
- Corridor calls and their location / direction
- Assigned calls
- Waiting interval of each call
- Mode of operation - Up-peak - Down-peak - etc.
- Motion of cars

This information shall be analyzed by the Group Computer which will instantly select and dictate the proper action for each car. The selection of action shall correspond to current actual traffic conditions. Assignments of calls shall be constantly reviewed and calls re-assigned when service can be improved.

The system shall contain but not be limited to the following features:

Anti-Nuisance	Cancellation of car call when proper inputs are not provided
Dispatch Protection	Predetermined stops in the event of failure of dispatcher
Delayed Car Removal	Removal from group of a delayed car
Load Dispatch	Lobby dispatch with predetermined percent of rated capacity
Load Bypass	No hall call allocation accepted
Program Door Control	Varying door times according to traffic
Long Door Hold	“DH” button extends door open dwell time for loading purpose
Independent Service	Removal from group for independent control
Car Parking	Specified floor parking capability

Anti-Nuisance

Cancellation of car call when proper inputs are not provided

The system shall provide for continuously changing operation in various peak traffic situations which include predominantly one way, intense directional traffic with opposite direction traffic, balanced two-way traffic, light traffic and occasional traffic. All traffic analysis shall be done by optimization and call allocation. All program changes shall be selected automatically. The system shall automatically adjust to the number of elevators available for group service.

The system operations shall change continuously by demand and not rely on a forced method of program change.

The system shall be capable of being readily programmed to suit varying building requirements.

The system shall include a color monitor and printer in the security room and the building manager's office. The system shall have capability to display on the monitors car movement, car position, car calls, landing calls, reserved calls, car load status, call mode status, car direction, door motion and door position. The system shall include a Windows version of the Central Monitoring System (CMS) or Interact. The machine room CMS station or Interact station shall be equipped with a printer to be used to print out CMS/Interact reports. The CMS/Interact will be complete without the calling feature.

The group dispatcher shall contain capability of fault diagnostic, traffic statistics, system parameters, test data and traffic mode to be displayed on machine room monitor. The system shall have the capability of printer connection for printouts. All diagnostic equipment shall be built into the control cabinets or provided separate as part of the base system. No required diagnostic equipment shall be removed from the equipment room.

ALL CARS

Full-Load-By-Pass - Cars loaded to a pre-determined level shall not be assigned to landing calls in both directions until the car load has decreased below this level. All by-passed calls shall remain activated and will be answered by another assigned car or when the load in the car has been decreased to accept additional passengers.

Delayed-Car-Protection - The system shall automatically remove a car from the group in the event the car is delayed for a predetermined time. The car shall be automatically put back into group operation when the cause of the delay has been eliminated. On simplex operation an adjustable delay time shall be provided to disconnect hall calls and prevent further registrations of hall call until delay has been corrected.

Direction-Reversal - A car without registered car calls arriving at a floor where both up and down hall calls are registered shall initially respond to the hall call in the direction that the car was traveling and, if no car or hall call is registered for future travel in that direction, the car shall reverse its travel preference and respond to the hall call in the opposite direction. Lantern operation always correspond to the next direction of elevator travel.

Programmed-Door-Control - Door opening time intervals shall be programmed to match the prevailing passenger transfer condition as follows:

- 1) Extended-Door-Interval - When the car stops at a floor where both a car call and hall call corresponding to the direction of car travel have been registered, the extended door interval shall be selected automatically. The extended door interval shall allow sufficient time for passengers in the hall to reach and enter car after exit of last passenger from car.
- 2) Medium-Door-Interval - When the car stops at a floor where either a car call or a hall call corresponding to the direction of car travel has been registered, the medium door interval shall allow sufficient time for passengers in the hall to reach and enter the car, or a passenger in the rear of a crowded car to exit from the car.
- 3) Shortened-Door-Interval - When passenger transfer continues after the extended or medium door interval has expired, the shortened door interval shall recycle with each passenger transfer until the last passenger has passed through the photo- electric light beams.
- 4) Long-Door-Hold - Initiated by "DH" button in car station. Provide variable extended door open dwell time (from 20 seconds to 40 seconds). Once the feature is activated, doors remain open until time has expired, or any car station button, door close button, nudging, or firefighter feature is activated to cancel this feature.
- 5) Floor-Passing-Tones
- 6) If passenger transfer is complete prior to the expiration of the extended or medium door intervals, the registration of a car call shall automatically initiate the shortened door interval.
- 7) If the doors are closing and a light beam is interrupted, the doors shall reverse and reopen to the fully open position. The doors shall reclose after the shortened door interval has expired.

- 8) Lobby-Door-Time - Main floor door times shall be independently adjustable. As a car approaches a lobby terminal, the car and hoistway doors shall be signaled to open automatically for a pre-determined time interval to allow passengers to leave the car. After the expiration of the interval, the doors shall close until a call is registered at which time the doors shall reopen.
- 9) Hall-Button-Automatic-Cutout - In the event that a hall button is stuck or damaged for a constant registration signal and can not be successfully canceled it shall automatically be removed from the assignment for adjustable time interval. When the interval has expired the call shall be re-assigned as a normal call and again an attempt made to cancel it.
- 10) Car-Parking - A method of statistically placing car at floors when demand for service is low. This shall be field programmable and shall not be such that one car serves a zone of floors. The assignment process shall be used for call response.
- 11) Up-Peak - This mode shall become effective when the call demand is predominantly in the up direction from the entrance floors. Timing at entrance floor shall be adjustable.
- 12) Down-Peak - This mode shall become effective when a predominance of down hall calls are registered with a minimum of up hall calls and car calls when cars are traveling in an up direction or leaving the entrance floors.
- 13) Intense Traffic - Balanced modes shall be effective when calls are not predominantly in one direction. During these modes, the cars should remain spaced apart and assignments made to average the waiting interval. No continuous bunching of cars shall be allowed.
- 14) Light Traffic - Shall cause the cars to establish parking floors, or areas, that will place the cars in a position to respond in a minimum response time when a call is assigned.
- 15) Special Programs - Shall interact in the various modes to further enhance the system to provide the optimum minimum response and riding times.

2.30 INDEPENDENT OPERATION

A key operated switch shall be provided for each car for selecting independent service operation. When the switch is turned to the "on" position, all previously registered car calls for that car shall be canceled and an attendant will be required to operate the car.

The car shall park with its doors open. The closing of the doors and starting the car shall be subject to constant pressure on a floor button in the car operating panel until the car starts in motion. If the floor button is released before the doors are fully closed, the doors shall reopen.

After the car is in motion, the floor button may be released and the car shall automatically proceed to and stop at the floor for which the car call was registered.

A car operating on independent service shall automatically bypass registered hall calls. Registered hall calls shall not be canceled, but shall remain registered and answered by a car in normal automatic operation.

When the independent service switch is turned to the "off" position, the car shall be restored to normal operation.

2.31 HOISTWAY ACCESS

The existing hoistway access switches shall be removed and replaced with new. Key operated switches shall be furnished in hoistway entrance jamb or adjacent to the jamb at top and bottom floor for hoistway access. A key operated switch shall be furnished in the car operating panel to place the car on access control.

Operation of hoistway access switches after initiation by car operating switches shall operate car with hoistway door open at the respective floor being operated and allow access to top or bottom of hoistway.

Rail mounted switches shall be provided to limit the car travel to comply with code.

2.32 DISPATCH PROTECTION

A reserve dispatching feature shall be provided which allows the cars to run for simulated hall calls in the event of the loss of communications between the individual and dispatching computers, or the loss of power to the hall call pushbuttons.

When reserve dispatching is activated, each car shall answer simulated hall calls in a pre-determined pattern, depending on the designation of the car and the number of cars in the group.

Cars shall respond to a different pattern of calls on an alternating basis as each one leaves the bottom floor. The top floor, bottom floor and all main floors shall be served by all cars on all trips.

When communications is restored or power reconnected to the hall call pushbuttons, the cars shall resume automatic operation.

2.33 ANTI-NUISANCE

An anti-nuisance feature shall be provided which will reset the car buttons, thus requiring re-registration of car calls, if an excessive number of calls are registered for the measured load.

If, while in normal, automatic operation, the car makes a predetermined number of stops in response to car calls, without the photo light beam being interrupted, indicating that no one is entering or leaving the car, all registered car calls shall be canceled. The number of stops used in the anti-nuisance feature shall be adjustable.

Once the car calls are canceled, the anti-nuisance feature shall not function again until the photo light beam has been interrupted at least once.

Load detection combined with number of registered car calls may be used as a method of providing call cancellation.

2.34 FIREFIGHTER'S SERVICE

The elevators shall be equipped with devices and circuits to provide firefighters service in accordance with applicable codes in effect as of the date of this specification.

A smoke-sensing device shall be installed at all floors and such other locations as required by local code.

Smoke-sensing devices shall be provided, installed and wired by the Contractor and shall be equipped with a dry contact and shall be wired to the elevator machine room for connection to the elevator control system circuits.

PHASE-I-OPERATION

Provide a three position ("On" "Off" "By-Pass") key operated switch at the designated level. The key shall be removable in the "On" and "Off" position. With the key in the "Off" position normal elevator service shall be provided and the smoke/combustion detectors shall be functional.

Smoke detectors shall be provided in the elevator lobby, at each floor, and in the associated elevator machine room. Smoke detector operation at the main or designated level shall return all cars to an alternate level as approved by the enforcing authority. Smoke detector activated operation shall only be reset manually.

The key switch at the designated level in the "by-pass" position shall delete the smoke/combustion detector command and restore the elevators back to normal operation.

Phase I operation shall be initiated by the activation of the smoke/combustion detectors or placing the designated level key switch in the "On" position. The following operation shall occur:

- a) All cars controlled by this activation shall return non-stop to the designated level, the doors shall open and remain open.
- b) A car traveling away from the designated level shall reverse at the next available floor without opening its doors and cause it to proceed to the designated floor non-stop.
- c) Door reopening devices on power operated doors affected by smoke or heat shall be rendered inoperative. Mechanically operated devices shall remain operative.
- d) Cars standing at any floor other than the designated floor shall close their doors and proceed to the designated floor without stopping for car or hall calls.
- e) Cause the car and hall buttons to become inoperative, and extinguish call register lights and hall lanterns. Position indicators shall remain operative.
- f) Cause the emergency stop switch to become inoperative once the car has started in motion. All other emergency devices shall remain operative.
- g) All cars shall be provided with a visual and audible signal system which shall be activated and remain activated until the car has returned to the designated level.
- h) A car standing at a landing shall have the door open button rendered inoperative as soon as the door is closed and the car starts to the designated level. It shall remain inoperative until the car has returned to the designated or alternate level.

PHASE-II-OPERATION

A three position (labeled "Off" "Hold" and "On") key operated switch shall be provided in the car operating panel in each car. The switch shall become effective only when Phase I operation is in effect and the car has returned to the designated or alternate floor. The key shall be removable in each position.

The operation on the switch shall not change the operation until the car is at a floor with the doors fully open.

The switch shall be in normal operation when it is in the "Off" position. Phase I operation shall be in effect if activated by turning to "On".

The switch in the "Hold" position shall cause the car to remain at the first floor with its doors open and the door close button shall be inoperative after the car has been placed into Phase II operation at the designated or alternate level.

Operation of the key switch to the "On" position shall place the elevator on Phase II emergency operation. The operation shall be as follows:

- a) The elevator shall be operated only by a person in the car registering car calls.
- b) All hall lanterns and corridor buttons shall remain inoperative.
- c) Doors shall be opened by constant pressure of the "door open" button and if the pressure on this button is released prior to the time the doors reach their full open position, the doors shall immediately re-close. Once the doors are fully open, they shall remain open until the closing procedure is initiated as described herein.
- d) After registration of a car call, the doors shall be closed by constant pressure of the "door close" button.
- e) Car calls registered in error may be cancelable by momentary operation of the cancel button.
- f) Upon completion of the door close operation and the registering of a car call, the car shall travel to the car call floor and stop with the doors closed.
- g) Car shall operate only by registration of a car call in the car and does not respond to hall calls.
- h) Door reopen devices rendered inoperative in Phase I operation shall remain inoperative.
- i) The key operated switch in the hall to the "Off" position, "by-pass" position, or resetting the combustion detectors shall not override the car switch.

Phase I and Phase II switches shall operate by the same key. Locality standard keys shall be used. This key shall not operate any other devices and no other key shall operate these switches.

The description is for a standard firefighters service operation. It shall be the responsibility of the elevator contractor to provide firefighters service to meet the specific job location requirements in accordance with local code requirements.

2.35 CAR TOP INSPECTION STATION

An inspection station shall be provided on top of the car for operation of the car at low speed by authorized personnel. The station shall contain an inspection toggle switch, up and down buttons and a run/stop toggle switch. A safety button shall be provided. When the car top inspection switch is turned to the "insp" position, the car shall be put on inspection operation.

The car shall be run either up or down by constant pressure on the up or down button and the safety button providing the doors are closed and the safety circuit is made. Releasing the button shall cause the car to stop immediately. The button required to operate the car top inspection station shall be mounted on a pendant with a 6" cord.

Turning the run/stop switch to the "stop" position shall render the car inoperative. Turning the inspection switch to the "run" position shall restore the car to automatic operation.

The new car top inspection station should include a work light with cover and a 110-volt GFI receptacle. Locate the car top inspection station at a convenient location on top of the Crosshead.

Provide firefighter's buzzer and lighted jewel in the inspection station. Ensure compliance with the latest firefighter's provisions, required by local code authorities.

2.36 WIRING

All necessary wiring for proper operation of the equipment, beginning at the power sources shall be newly installed and shall conform to the requirements of the applicable electrical codes.

All conductors shall be run in rigid conduit or metal wireways and shall be installed in an orderly manner. Flexible metal conduit may be used for short runs between such equipment and risers and limit switches, interlocks, pushbuttons boxes, etc. and between controllers, motors and brakes.

All new communication cables for interconnections of controllers shall be furnished. The wiring shall be a shielded cable properly enclosed in duct and conduit as applicable.

All new wiring between hoistway and machine room equipment shall be furnished and installed in accordance with applicable codes and in a workmanlike fashion.

All power wiring in the machine room shall be of proper size and type for equipment furnished.

All wiring shall be in strict accordance with good wiring practices and in compliance with the National Electric Code and ASME A17.1 requirements.

2.37 TRAVELING CABLES

New coaxial traveling cables of adequate number of conductors shall be furnished. Traveling cables shall be so suspended and anchored that the strain on the individual cable conductors shall be reduced to a minimum. Connections to terminal blocks shall be free from all strain, and the cables shall be free from contact with the hoistway construction, car or other equipment.

The outer cable covering must remain intact between junction boxes without abrupt bending of the cable. They must be hung so that the proper size loop is obtained. The outer braid shall be fire resistant and meet Underwriters Laboratories Standard Test. Steel supporting strands shall be used where the rise exceeds 100 feet. Ten percent (10%) spares shall be provided in all traveling cables.

The cables shall contain #14 gauge wires for lighting supply. Traveling cables shall contain a minimum of two (2) shielded twisted pair and jacketed pairs per traveling cable. The traveling cables shall contain one (1) co-axial cable to run continuous from the controller to the car top for use with closed circuit TV.

A car top junction box with compression terminals shall be provided. The traveling cables shall be terminated in the car junction box.

2.38 LIMIT SWITCHES

Normal and final terminal stopping devices -

- 1) Provide new normal and final terminal stopping devices shall be provided for the elevator at each terminal. Terminal stopping devices shall have rollers having rubber or other approved composition to provide silent operation when actuated.

- 2) Normal terminal stopping devices shall be provided and arranged to stop the car automatically from any speed obtained under normal operation within the top and bottom overtravels, independent of the operating devices, final terminal stopping device, and the buffers.
- 3) Final terminal stopping devices shall be provided and arranged to stop the car and counterweight automatically from the speed specified within the top clearance and bottom overtravel independent of the operation of the normal terminal stopping device but with the buffers operative. When the final terminal stopping devices operate, normal operation in either direction is prohibited.

2.39 PIT SWITCH

The existing pit stop switch shall be replaced.

A stop switch shall be provided in the elevator pit. The switch shall be designed to cut off power to the elevator motor, apply the brake and bring the car to rest independent of the regular operating devices. The switch shall be accessible from the pit access door or pit ladder. Where multiple hoistways are accessed from a common door the stop switch for each elevator shall be located adjacent to the nearest point of access from the door.

2.40 CAR OPERATING PANEL MAIN

Provide a new car operating panel main and locate it on the front return. The panel shall contain floor call buttons corresponding to the number of floors served plus the standard devices of door open, door close, and alarm buttons, fan and light switches as a minimum. The buttons shall be Innovation PB-8 with numeral stamped on button. Lamping to be long life white LED cluster bulbs.

The car station shall have a button marked "DH" on the braille to initiate the door hold feature. The braille used in the car station shall be SCS square cast with white letters on black background with no border.

Locate the standard required cluster of devices at a centerline height of 35" from cab floor to comply with accessibility requirements. All standard required devices and floor call buttons shall have accessibility indications adjacent to them.

Appropriate firefighter's service switch, jewel, and fire call cancel button, shall be provided in car operating panel. The face of the core of the key switch shall be permanently stamped with an arrow indicating position of the switch. Provide firefighters jack in the car operating panel.

The car operating panel shall include a lockable service panel. Locate rocker switches for lights, independent service, emergency light test, inspection, and stop switch behind the lockable panel door. The service panel will also incorporate a 15 amp receptacle (GFI).

An auto-dial telephone meeting ADA requirements shall be an integral part of the car operating panel. A flush PB-8 push button similar to all of the push buttons in the car operating panel shall be provided for the dialing of the auto-dial telephone. The pushbutton crystal must be flush with the panel and include a call answer light. The telephone shall be a Rath Microtech, of the latest model. The car operating panel shall have a speaker grill for the phone. The speaker shall also be provided for firefighter's intercom, if required. The phone must work with the existing phone system.

The car operating panel shall have the following engravings:

Capacity	.375" size
Car #	.5" size
Phase II Firefighters Service Instructions	.125" size

2.41 CAB RIDING LANTERNS

Provide new cab riding lanterns in car entrance jamb, (***NOT REQUIRED*** if using *Innovation Direction in hall*). When the car stops and the doors are opening, the lanterns shall indicate the direction in which the car will travel. When the lantern is illuminated, a tone shall sound once for the "up" direction and twice for the "down" direction.

The lanterns shall not be in operation should the car be operating in the "independent" mode. The lanterns shall meet all applicable codes and ADA requirements.

The lantern shall incorporate long life LED cluster bulbs and new tone sounding devices. The down lantern shall illuminate red and the up lantern shall illuminate white. The white LED cluster bulbs are to be used in the up lantern and the red LED cluster bulbs in the down lantern.

2.42 POSITION INDICATORS – CAR

The existing position indicator shall be removed and replaced with a new position indicator in the upper portion of the car station. The electronic readout type position indicator shall be provided to give a visual indication of the car position and direction of car travel.

As the car travels through the hoistway, the numeral corresponding to the floor at which the car has stopped or is passing shall be displayed on the position indicator. The numeral shall be formed on a "Bar Segment" or "Dot Matrix" display, from binary information received from the controller. Change from one numeral to another shall be instantaneous and complete. The assembly shall provide the required floor passing tones.

The readout size letters shall be a minimum of 2" in height with arrows unless herein specified to be of a different size. The elevator will have a readout in the front cab transom. The position indicator shall be provided with floor passing tones. The position indicator cover plate cover any hole left in the transom panel by the previous position indicator.

2.43 POSITION INDICATORS - HALL

At the lobby floor, *retain and refurbish* the existing "ROTARY DIAL" type position indicators to like-new condition.

2.44 CORRIDOR CALL BUTTONS

The existing corridor call button shall be removed and new flush mounted stainless steel fixtures located at code-required ADA height. The new cover plates shall be of such length to cover existing button box and new box location with one cover plate.

A riser of corridor call buttons shall be provided for each group of cars. The button assembly shall consist of a single illuminated button for each terminal, and two illuminated buttons at each intermediate landing.

The button or other indication shall be illuminated when it is pressed for the desired direction, and the action registered in the group control. The buttons shall be identical to the floor call buttons in the car operating panel, unless specifically detailed to be of other design.

A firefighter's service switch assembly shall be provided at the fire recall floor(s), as required by code. The cover plate shall be engraved or permabonded with 'IN CASE OF FIRE, USE EXIT' pictograph. The cover plates also shall contain applicable Braille to comply with code and/or ADA requirements. The cover plates are to be stainless steel #4 finish. A speaker, and/or firefighter's phone jack shall also be provided for the firefighters, if required.

2.45 ALARM BELL

The existing alarm bell shall be replaced with a new alarm bell to work with the car's emergency light system.

An electric signal bell shall be provided in or adjacent to the elevator hoistway. The bell shall be connected to the alarm button in the car operating panel.

2.46 EMERGENCY POWER

Provide provision for Emergency Power, *if required*.

When stand-by power has been applied to the elevator controllers, the operating system shall automatically select one elevator, start the car, return it to the main floor and remove it from service. A second elevator shall then be selected and returned to the main floor, and this sequence shall be followed until all elevators have been returned and removed from service. The operating system shall then automatically return a pre-selected elevator, or elevators, to service for operation in the normal manner. If a pre-selected elevator is not in operating condition, the operating system shall automatically select another elevator.

When normal power is restored to the building, the elevators in operation shall automatically be returned to the main floor and removed from service. Stand-by power shall then be removed and, after a lapse of approximately one minute, normal power shall be applied to the elevator controllers and all elevators shall return to normal operation.

The Owner shall furnish and install the following:

- 1) Stand-by power having the same voltage, phase and frequency as the normal power and of sufficient capacity to operate one or more elevators with rated load at rated speed in the up direction.
- 2) A transfer device for transferring the power supply to the elevator power feeders from normal power to stand-by power. The transfer device shall contain two auxiliary contacts, one of which is closed when the transfer device is in the normal power position, and the other which is closed when the transfer device is in the stand-by power position.
- 3) Wiring from each auxiliary contact on the transfer device to the designated elevator control panel.
- 4) Means for absorbing power regenerated by the elevator motor generator set drive motor when the elevator is running with overhauling load, such as maximum load down.

The elevator contractor shall furnish and install:

- 1) Provisions in the operating system for automatic selection and operation of elevators on stand-by power.

- 2) Wiring between the stand-by power fixture and the elevator controllers.

2.47 FIRST FLOOR LOBBY PANEL

To be #4 stainless steel cover plate. Panel to have standby power manual override switch.

2.48 LOBBY HOISTWAY VENT FIXTURE

Fixture to have key switch and lighted jewel for vent position.

2.49 TELEPHONE

A new Rath Micro Tech Telephone shall be installed integral in the car station.

2.50 HANDRAILS

The existing handrails shall be removed and replaced with 1.5" diameter tubular stainless steel handrails at ADA height of 32". The handrails shall have their ends turned to the cab wall.

2.51 ENTRANCES

The existing complete entrances shall be reused. Entrances to be refinished to like new and painted the color of the Owner's choice.

New Entrance Braille adhesive with mechanical fasteners shall be provided and installed. The braille shall be cast with white characters on black background and no border. Braille manufacturer shall be SCS.

2.52 HOISTWAY DOORS

The hoistway doors shall be replaced with code-compliant UL labeled doors. The hoistway door frames shall be retained and refinished, and repainted the color of the Owner's choice.

1. The door panels shall be formed of not lighter than 16-gauge steel and all joints shall be welded. Each door panel must be provided with 2 gibs, with gib fire stops. Each door panel to be provided with new safety retainer guide on lower portion of door as required by safety inspection authorities. The hanger on the doors shall be provided with required safety retained. Provide code required unlocking devices.
2. The bottom of the doors shall be provided with removable laminated phenolic guides that run in the sill slots. Doors shall be reinforced for

separate hangers or built to include integral hangers and shall contain suitable material for sound deadening.

3. The doors are to be painted with the color of the architect's choosing.

2.53 CAB

The existing cab shall be retained and modified with the following SNAP CAB selections of the Owner / Architect:

1. Island down lights in stainless steel with halogen bulbs
2. Tubular 1.5" stainless steel handrails (located at ADA height)
3. CAB LAYER CHOICES –
 - a. 6 – Dark Maple with Dental Molding
 - b. 5 & 4 – Dark Maple Raised Panel
 - c. 3 – Dark Maple Flat Panel
 - d. 2 – Dark Maple Raised Panel
 - e. TOE KICK – Stainless Steel

In addition to the above specified cab interior finishes, provide new #4 stainless steel reveals, base and frieze, and provide appropriate concealed vent. Cab modifications are required for code compliance and to meet aesthetic objectives.

Existing exhaust fans should be replaced with a silent, high-velocity blower. Provide new Morrison OE 90 2-Speed Silent Squirrel Cage Blower with stainless steel diffuser.

2.54 RELATED WORK

A. WORK BY OWNER

1. Any modification to existing structural support required for new equipment. Contractor will provide loading data if in excess of 5% of existing load.
2. Any modification to existing shaftway to provide a legal shaftway in compliance with latest code requirements.
3. Vent hoistways to outside air per applicable Building Code. Minimum 3 sq. ft. or 3½% of hoistway area per hoistway (elevator). The hoistway vents must also be a motorized louver style. The motorized louver style is to be activated by a firefighter using a key switch at the first floor lobby. The louver shall have a switch activated by the louver blade that lights the position of louver lighted jewel in the lobby fixture.

4. Changes required to ventilation or temperature control system to maintain machine room temperature range of 55oF to 85oF. The 55oF temperature is maximum free air temperature at any place in the machine room. Air movement must be such as to eliminate hot areas. The relative humidity should not exceed 85% non-condensing.
5. Changes required to provide GFI power outlets in machine room and adequate machine room illumination.
6. Changes to any electrical requirements that may be caused by equipment specified or furnished in the shaftway and machine room.
7. Any modifications to machine room to provide adequate and code compliance access to same.
8. Suitable storage space for the elevator equipment during the modernization process.
9. Heat and smoke sensing units required by local codes. Such units will be installed and wired to marked terminal in the machine room.
10. Removal of any illegal pipes, drains that may be in code violations.
11. Foreign drains, pipes, chases, equipment, etc., not associated with elevator equipment are not permitted to be exposed in elevator machine rooms, hoistways or pits.
12. Fire extinguisher of proper type mounted in machine room.
13. Emergency power source and signaling information of power transfer to elevator emergency power panel.
14. Providing any additional machine room space that may be required due to existing conditions not in compliance with local code requirements.
15. Providing electrical power for lights, tools, and hoists during the modernization phase and for testing and adjustments of the completed system.
16. Providing power of proper characteristics for equipment as required by National Electric Code and ASME A17.1 Code for elevators.
17. Machine room and hoistway sprinklers, if required by applicable Building Codes and conforming to ANSI/NFPA No. 13 and ASME A17.1, Rule 102.2
 - a. Risers and returns must be outside elevator spaces.

- b. Branch lines in hoistway may supply sprinklers at only one floor.
 - c. Shutoff valves must be supplied outside these spaces.
 - d. Means must be provided to automatically disconnect mainline power to elevators prior to application of water. Power may not be disconnected from operation of sprinklers in other building areas.
 - e. Disconnect means shall not be self-resetting.
18. Machine room access doors must be 1½ hour label, self closing and locking and openable from inside without key. Door must have smoke seal.
19. Electrical to include the following:
- a. Wiring through protected (fused) mainline disconnect switches or circuit breaker in machine rooms to each elevator controller for machine power. Maximum voltage drop of 5%. Locate disconnect switch near entry within sight of motor starter or car controller. NOTE: A second non-fused disconnect or stop switch (provide by the Elevator Contractor) may be required at each remote hoist machine.
 - b. Standby power through regular power feeders for one elevator (per group) to run at a time. Transfer switch and sensing signal indicating standby power operation to elevator machine room through fused disconnect switch. Provide means to absorb regenerated power from elevator operating on standby power. Provide transfer switch with a 15 - 25 second delay timer, an in-phase monitor or a neutral position to postpone the application of standby or normal power until the elevators come to a complete stop.
 - c. Emergency power through regular power feeders, if emergency power is being provided, to run cab lights, car exhaust blowers, hoist machine cooling blowers, intercom amplifier and lobby panel and fire panel elevator CRT monitors.
 - d. Machine space, secondary deck and overhead lighting, switches and grounded utility outlets. Light switch adjacent to strike side of entry door. Lights located over machines and about 18" in front of and behind control panels.

- e. Wiring through disconnect switch to signal controller designated by Elevator Contractor in passenger machine room (approximately 20A at voltage required by Elevator Contractor).
- f. Wiring for elevator lighting and ventilation (approximately 20A capacity per elevator 120-3-60). Circuits preferably on standby power system. Wire to individual car control panels. Provide circuit over current protection and switch assembly on each control panel. Switch assembly to be properly identified.
- g. Pit lighting, switches and GFI receptacles (one per elevator). Locate light switch at top of access ladder, reachable from entry door. Locate pit lights to clear elevator car and equip them with wire bulb guards.
- h. Telephone connection to each individual elevator controller in machine rooms.
- i. Temporary lighting and power for construction when elevator work starts at jobsite.
- j. Final power (or the equivalent thereof) for starting, testing and adjusting.
- k. Raceways and wiring outside hoistways for smoke sensors, remote monitoring panels, etc.
- l. Smoke detectors per NFPA No. 73E, Chapter 4 for Automatic Elevator Return, wired to elevator vestibules at each floor and associated elevator machine room. Sensor at main evacuation level must be on separate zone. (Sensor activation returns elevators to alternate evacuation level.)
- m. Remove equipment in machine room not related to the elevator equipment, i.e. unused electrical equipment, panels and wiring.

B. WORK BY ELEVATOR CONTRACTOR

- 1. Contractor must assist Owner with coordination of WORK BY OWNER (as described in 1.13 Related Work – WORK BY OWNER)
- 2. Any permanent screening for pits or hoistways that may be required by specification or codes.

3. Patching, grouting, plastering, masonry and painting that may be required to finish walls and floors around areas of new installed fixtures or entrances required for this proposal unless specifically detailed in this proposal.
4. Removal of any illegal conduit or wiring previously installed in hoistway and machine room.
5. Telephone instruments and their connections to telephone system. Telephone wiring for each elevator to be terminated in each elevator controller.
6. All barricades required to protect open hoistway and entrances when new entrances are added or existing entrances and door panels are removed for replacement or refinishing.
7. Painting of machine room floors with good grade of grey enamel paint.
8. Painting of machine room walls with color of Owner's choice.

PART 3 – EXECUTION

3.01 INSPECTION / ADJUSTMENT / TEMPORARY USE

Should the use of any elevator be required prior to final completion, the Owner shall pay for any labor and material necessary to arrange the elevator(s) for temporary service, and shall execute a "Temporary Acceptance" agreement furnished by the elevator contractor and be bound by the terms and conditions thereof. The Owner shall provide, if required, temporary car enclosures, guards or other protection for the hoistway openings, necessary power, signaling devices, lights in the car, elevator operators, and other work to permit the temporary usage.

The Owner shall also pay all costs of power and operation, including maintenance during temporary use, and agrees that the complete elevator equipment will be left in the same condition that it was at the time it was turned over for temporary use. If repairs or replacements are necessary to restore the elevator equipment to its condition at the time it was turned over for temporary service, the Owner shall pay for such repairs or replacements at regular time/material rates.

The completion schedule of each elevator used as a temporary elevator prior to final acceptance shall be extended by the amount of time necessary (no less than the period of time and temporary usage) to complete the installation and make final adjustments during regular working hours.

3.02 PREPARATIONS

Hoistway-Inspection: Elevator Contractor must verify dimensions of hoistways, pits and machine rooms; and inspect the support structure and services, and the conditions under which elevator work is to be installed; and notify Owner or his agent contractor in writing of unsatisfactory dimensions or conditions. Do not proceed with elevator installations until unsatisfactory dimensions and conditions have been corrected in a manner acceptable to Elevator Contractor.

3.03 ADJUSTMENT

The elevator contractor shall have uninterrupted use of the elevator(s) during regular working hours for final adjustments.

3.04 INSTALLATION OF ELEVATOR SYSTEM

General - Comply with all instructions and recommendations for installation of elevator systems.

Welded-Construction - Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.

Coordination - Coordinate elevator work with work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines and levels designated by Owner or his agent, to ensure dimensional coordination of the work.

Sound-Isolation - All new equipment furnished shall be mounted on vibration-absorption mounts, designed to effectively prevent transmission of vibrations to structure, and thereby eliminate sources of structure-borne noise from elevator system. Lubricate operating parts of systems, including ropes, as recommended by manufacturers.

Alignment - Coordinate installation of hoistway entrances with installation of elevator guide rails, for accurate alignment of entrances with cars. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum, safe, workable dimensions at each landing.

3.05 FIELD QUALITY CONTROL

Acceptance-Testing - Upon nominal completion of each elevator installation, and before permitting use of elevator (either temporary or permanent), perform acceptance tests as required and recommended by Code, and also perform other tests, if any, as required by governing authorities. A copy of the test results shall be forwarded to the Owner and one copy to the Consultant.

Advise Owner and/or Consultant and inspection department of governing agencies, in advance of dates and times tests are to be performed on elevators.

3.06 PROTECTION

Installer shall advise Owner and/or the Consultant of recommended protection facilities and procedures, to prevent damage and deterioration of completed elevator work (regardless of whether placed in temporary service) during remainder of construction period. Provide complete inspection and maintenance service for elevators in temporary service, if any, for period of such service, at a cost to be determined when such service is provided.

3.07 INSPECTION

The Consultant shall be permitted to make periodic and final inspections of the work for compliance with contract documents. The contractor shall provide manpower necessary to assist the architect during such inspections. The architect will prepare and submit to the contractor inspection reports describing incomplete or corrective work required to satisfy contract requirements.

3.08 SCHEDULE

The completion schedule for the modernization of cars shall be 100% complete by the date entered on the bid documents. For every day beyond the scheduled completion date, a penalty of \$ **200.00** per day will be charged to the Contractor.

A schedule will be submitted after award.

- END OF DIVISION 14 -



Department of Public Administration - Maintenance Operations
Architecture, Facility Management Services and Street Light Utility

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DRAWINGS:

Ground Floor
First Floor
Second Floor
Third Floor
Fourth Floor
Roof Plan

APPENDIX

[illegible]

DECOMMISSION

MODERNIZE

DECLASSIFICATION #9

[illegible]

ANAL. Calcd for $C_{10}H_{12}O_4$: C, 64.57%; H, 6.45%. Found: C, 64.5%; H, 6.4%.

[illegible]

DECOMPOSITION #2

[illegible]

DeMossion #1

DECOMMISSION #2

MODEP2N17E

[illegible]

PENTHOUSE
• DECOMMISSIONS
#1

Modernize

DECOMMISSION
#2

